

Arizona Rural Transit Needs Study
Executive Summary

Final Report

prepared for

Arizona Department of Transportation

prepared by

Cambridge Systematics, Inc.

in association with

TranSystems Corporation

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Executive Summary

The State of Arizona Rural Transit Needs Study provides regionally-based solutions to rural public transportation in Arizona. The Study is intended to serve as an objective, analytical basis for establishing Arizona's long-term strategic direction of rural transit service provision. The Arizona Department of Transportation, Public Transportation Division (ADOT-PTD) worked in close partnership with regional planning organizations and Councils of Governments (COG) throughout the State to prepare this Study. The primary Study tasks focused on a 10-year planning horizon including:

- Collection and analysis of relevant data, including population, employment, income levels, automobile ownership, and travel patterns;
- Identification of national trends in addressing rural transit needs;
- Obtaining key stakeholder input on current gaps in transit service;
- Developing projections for future transit demand;
- Identification and quantification of potential solutions; and
- Development of a plan for future new services and service improvements.

Four previous interim reports were completed that documented the methodology, findings, and recommendations of the above tasks of the Study. The transit demand and need analysis estimates that year 2007 ridership of existing rural transit services in Arizona will be about 1.4 million, relative to a total demand for rural transit services of 7.8 million. This indicates that only about 18 percent of existing transit demand are currently being met with appropriate transit services in rural Arizona (i.e., the unmet need is about 82 percent). If no changes to existing services are made, the percentage of unmet need will increase from 82 percent in the year 2007 to 87 percent in 2016.

This Executive Summary first contains the key findings from the previously completed interim reports. The Executive Summary then provides a description of specific service solutions, supporting policies and practices, and suggested next steps to enhance rural public transportation throughout Arizona.

STUDY BASELINE REPORT

The Study team developed 2005 baseline conditions in rural Arizona, including population, employment, auto ownership, income levels, and travel patterns. Rural Arizona is defined as all areas of the State that are not within one of the five existing urbanized areas in Arizona (Phoenix, Tucson, Yuma, Flagstaff, and Prescott). Table ES-1 shows the main characteristics of rural Arizona compared to the State's urbanized areas.

Table ES-1 Comparison of Rural and Urban Arizona, Year 2005

	Rural Arizona		Urban Arizona	
	Number	Percent of State Total	Number	Percent of State Total
Total Population	1,501,243	24.8%	4,543,742	75.2%
Elderly Population (ages 60 and over)	348,533	31.7%	749,488	68.3%
Low-Income Population	230,800	32.3%	483,090	67.7%
Employment	554,317	20.5%	2,155,772	79.5%

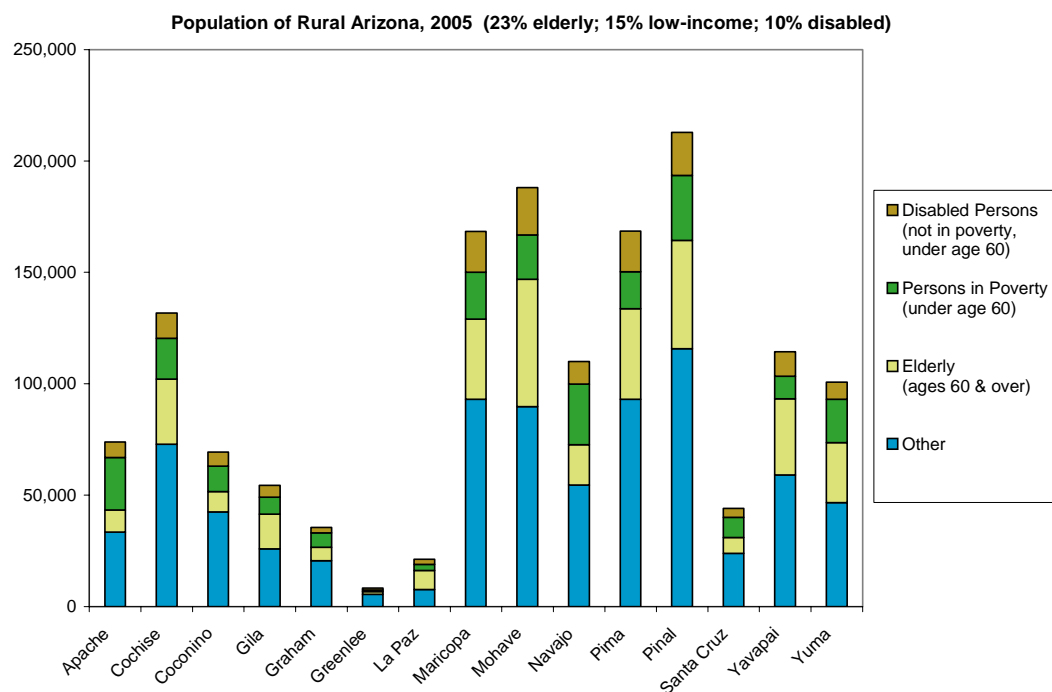
Source: Cambridge Systematics, based on U.S. Census and Arizona DES.

The key findings of this baseline conditions analysis include the following:

- The 2005 population of rural Arizona is estimated at 1.5 million, or 24.8 percent of the total state's population. The counties with the most rural residents are Pinal (about 213,000); Mohave (188,000); Pima (169,000); and Maricopa (168,000). Over the past 5 years, the most rapidly growing counties in rural population are Pinal (43.9 percent), Yuma (22.1 percent), and Mohave (21.3 percent).
- The 2005 elderly population ages 60 and over of rural Arizona is estimated at 348,533, or 31.7 percent of the total state's elderly population. The percentage of persons who are elderly in rural Arizona is higher than the urbanized areas of the State (23.2 percent compared to 16.5 percent). Counties with the highest percentage of elderly persons are La Paz (40 percent), Mohave (30.4 percent), and Yavapai (29.8 percent).
- The 2005 low-income population (i.e., persons with household incomes below the poverty line) is estimated at 230,800, or 32.3 percent of the total state's low-income population. The poverty rate in rural Arizona is significantly higher than in urbanized areas (18.1 percent poverty rate in rural Arizona compared to 12.5 percent in urban Arizona). The counties with the highest poverty rates are Apache (37.8 percent), Navajo (29.5 percent), and Santa Cruz (24.5 percent).
- While rural Arizona has about 24.8 percent of the State's total population, the share of the State's total employment in rural Arizona is smaller at about 20.5 percent.
- The largest county-to-county commuter travel flows are between Pinal and Maricopa and between Mohave and out-of-state (i.e., Nevada).

Figure ES.1 shows the 2005 population characteristics of rural Arizona by county. Elderly, disabled, and low-income population estimates in each county are broken out separately. About 23 percent of rural Arizona residents are elderly, 15 percent are persons of low income (nonelderly), and 10 percent are disabled persons (nonelderly).

Figure ES.1 Population Characteristics of Rural Arizona, Year 2005



Source: Arizona DES, 2005 and U.S. Census, 2000.

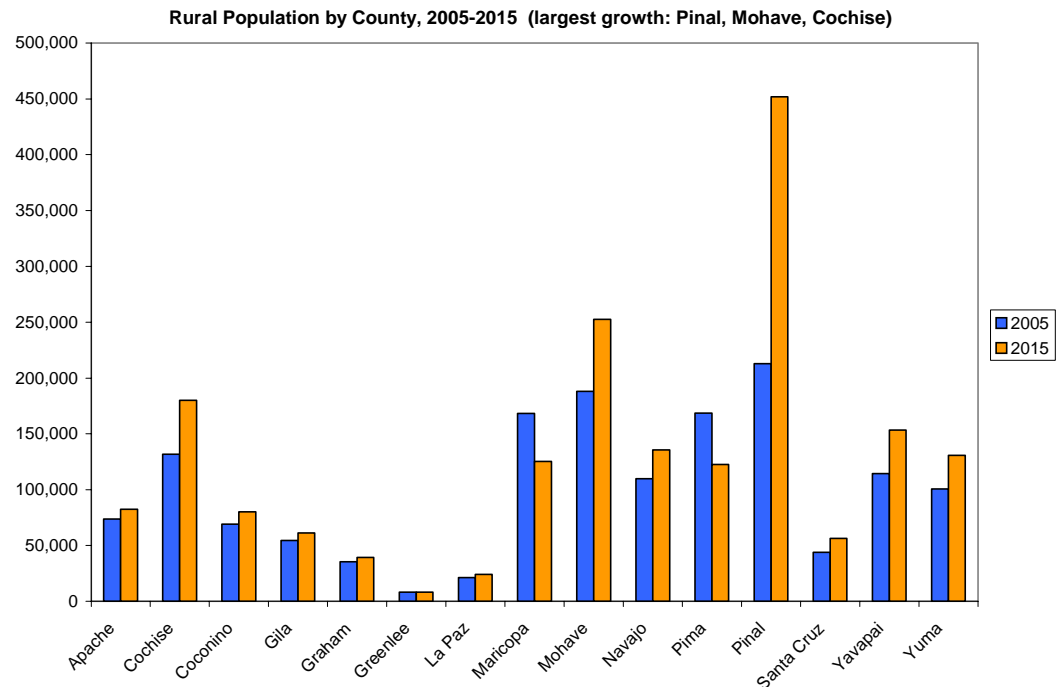
FUTURE TREND ANALYSIS

The Study team prepared future demographic trends in rural Arizona to the year 2015. The key findings of the future trend analysis include:

- The percentage of the State's population living in rural areas is projected to decline from 24.8 percent in 2005 to 20.2 percent in 2015, due to the designation of two new urbanized areas (Lake Havasu City-Kingman and Sierra Vista-Douglas), as well as the continued geographic expansion of the Phoenix and Tucson urbanized areas.
- In order to provide consistency in measuring transit demand over time, the populations of the projected new urbanized areas in Cochise and Mohave Counties, following the 2010 U.S. Census, are included with rural Arizona for this analysis.
- The 2015 population of rural Arizona is estimated at 1.9 million, including currently rural areas projected to become urbanized following the 2010 U.S. Census. The counties projected to have the most rural residents are Pinal (about 452,000); Mohave (253,000); Cochise (180,000); and Yavapai (153,000). The most rapidly growing counties in rural population are projected to be Pinal (112.3 percent), Cochise (36.6 percent), Mohave (34.4 percent), and Yavapai (34.1 percent).
- The percentage of persons in rural Arizona who are elderly is projected to increase from 23.2 percent in 2005 to 27.7 percent in 2015.

Figure ES.2 shows the projected population change of rural Arizona from 2005 to 2015 by county.

Figure ES.2 Population in Rural Arizona by County, 2005 to 2015



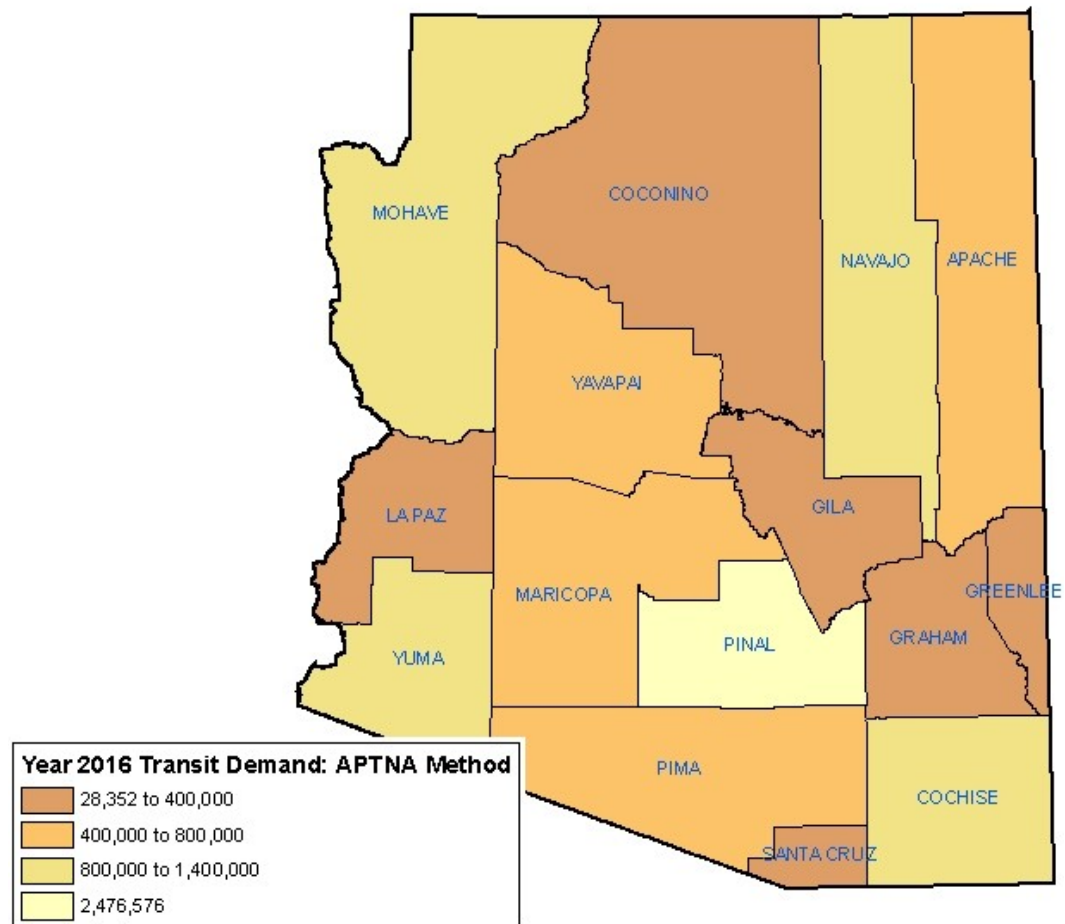
Source: Cambridge Systematics based on various data sources. Includes population of projected new urbanized areas in Cochise and Mohave counties.

TRANSIT DEMAND AND NEED

The Study team reviewed five analytical methods to assess their applicability in estimating transit demand and need in rural Arizona. The results from one method were recommended and carried forward to represent rural transit needs and gaps in the State:

- Transit demand in rural Arizona is projected to grow from 7.8 million passenger trips in 2007 to 10.5 million in 2016, an increase of 34 percent. This includes demand in currently rural areas that are projected to become urbanized by 2010 (according to the U.S. Census).
- The counties with the highest projected levels of rural transit demand in 2016 are Pinal (2.5 million trips), Mohave (1.3 million), Navajo (1.0 million), and Cochise (0.9 million). This is shown in Figure ES.3.

Figure ES.3 Projected Transit Demand in Rural Arizona, Year 2016



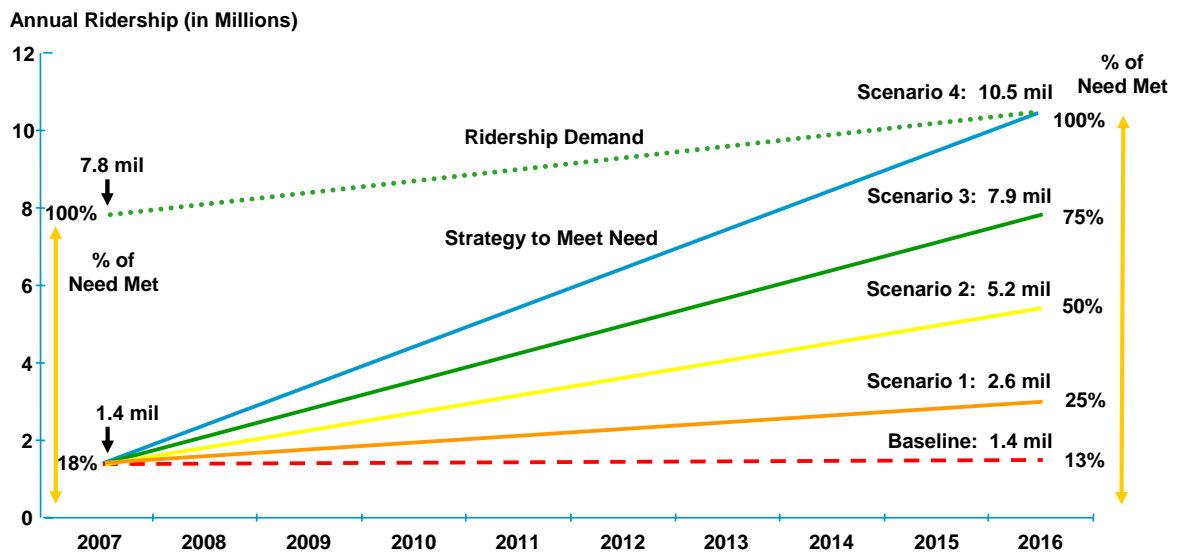
Source: Cambridge Systematics, Inc.; and TranSystems.

Annual ridership in 2007 carried by existing rural transit services in Arizona is estimated at 1.4 million. This indicates that only about 18 percent of existing transit demand are currently being met with appropriate transit services in rural Arizona. Existing rural transit services are projected to meet only 13 percent of total ridership need in 2016, if no additional services are introduced. This is a result of continued population growth throughout the State during the next 10 years.

Four scenarios were proposed to gradually improve and increase rural transit service provision over time in Arizona (Figure ES.4) including:

- Scenario #1 was designed to increase service provision to meet 25 percent of the projected rural transit need by 2016. With this scenario, rural transit ridership is projected to increase from the current level of about 1.4 million annual passenger trips in 2007 to 2.6 million annual trips in 2016.
- Scenario #2 was designed to increase service provision to meet 50 percent of rural transit need by 2016. With this scenario, annual rural transit ridership is projected to increase from 1.4 million in 2007 to 5.2 million in 2016.
- Scenario #3 was designed to increase service provision to meet 75 percent of rural transit need by 2016. With this scenario, annual rural transit ridership is projected to increase from 1.4 million in 2007 to 7.9 million in 2016.
- Scenario #4 was designed to increase service provision to fully meet the projected rural transit need by 2016. With this scenario, annual rural transit ridership is projected to increase from 1.4 million in 2007 to 10.5 million in 2016.

Figure ES.4 Total Annual Rural Transit Ridership Estimates by Scenario, 2007 to 2016



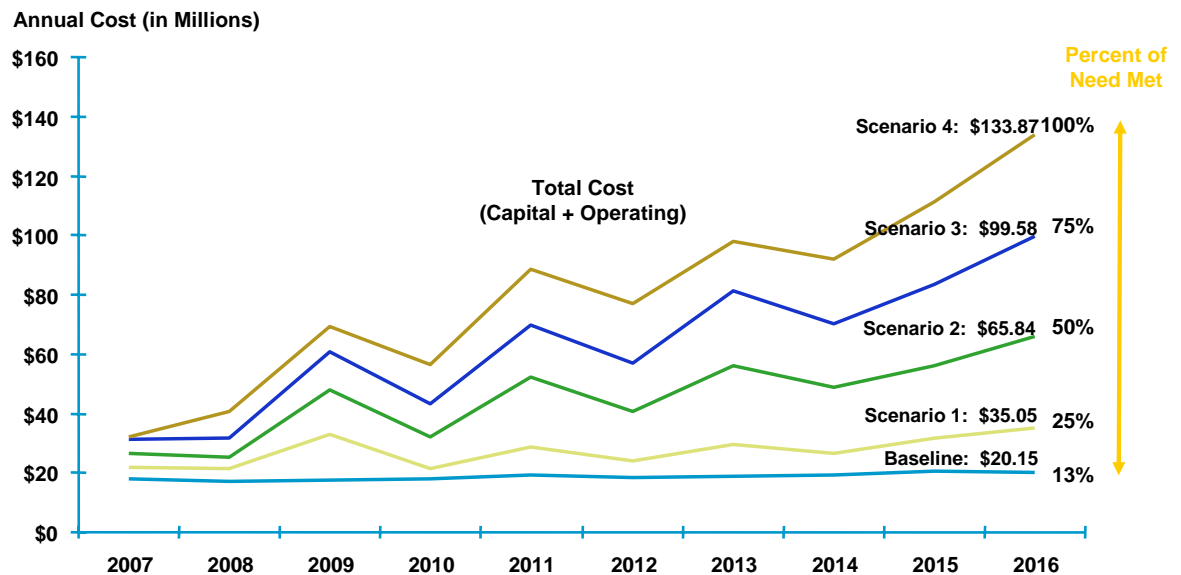
Source: Cambridge Systematics and TranSystems.

Based on Scenario #4, which fully meets projected transit need by the year 2016, the projected total capital and net operating cost per year for rural transit services statewide would increase from about \$32.0 million in 2007 to about \$133.9 million in 2016 (Figure ES.5). In addition:

- Net operating costs would increase from the current level of about \$12.1 million in 2007 to \$97.3 million in 2016. Capital costs, including vehicle and facility expenses, would increase from about \$19.9 million in 2007 to \$36.5 million in 2016. The total net operating and capital costs represents the cost estimate associated with a potential 10-year capital expansion plan.
- The total size of the vehicle fleet in rural Arizona would need to increase from the current level of about 397 vehicles in 2007 to 1,751 vehicles in 2016. In addition to the 1,354 vehicles that would be purchased for fleet expansion, another 1,892 vehicles would need to be purchased for fleet replacement.

The other scenarios represent lower levels of investment, with lower operating and capital costs. The 2016 costs are about \$20.1 million for the baseline, \$35.0 million for Scenario #1, \$65.8 million for Scenario #2, and \$99.6 million for Scenario #3.

Figure ES.5 Total Annual Rural Transit Cost Estimates by Scenario, 2007 to 2016



Source: Cambridge Systematics and TranSystems.

With each scenario, year 2016 is the target year for achieving the specified ridership target (i.e., percent of need met). Table ES-2 shows a summary of year 2016 costs and ridership for each scenario:

- The baseline scenario (no change to existing services) has a year 2016 cost of about \$20.1 million and a year 2016 ridership of about 1.4 million.
- Scenario #1 (25 percent of need met) has a year 2016 cost of about \$35.0 million and a year 2016 ridership of about 2.6 million.
- Scenario #2 (50 percent of need met) has a year 2016 cost of about \$65.8 million and a year 2016 ridership of about 5.2 million.
- Scenario #3 (75 percent of need met) has a year 2016 cost of about \$99.6 million and a year 2016 ridership of about 7.9 million.
- Scenario #4 (100 percent of need met) has a year 2016 cost of about \$133.9 million and a year 2016 ridership of about 10.5 million.

Table ES-2 Summary of Year 2016 Cost and Ridership by Scenario

	Percent of Need Met in 2016				
	13%: Baseline, No Change to Existing Services	Scenario #1: 25%	Scenario #2: 50%	Scenario #3: 75%	Scenario #4: 100%, Fully Meet Demand
Year 2016 Capital Cost	\$4,900,000	\$10,441,000	\$17,183,000	\$26,593,000	\$36,548,000
Year 2016 Net Operating Cost	\$15,247,000	\$24,608,000	\$48,660,000	\$72,990,000	\$97,319,000
Year 2016 Total Cost	\$20,147,000	\$35,048,000	\$65,842,000	\$99,583,000	\$133,867,000
Year 2016 Ridership	1,370,000	2,625,000	5,241,000	7,857,000	10,472,000

Source: Cambridge Systematics and TranSystems.

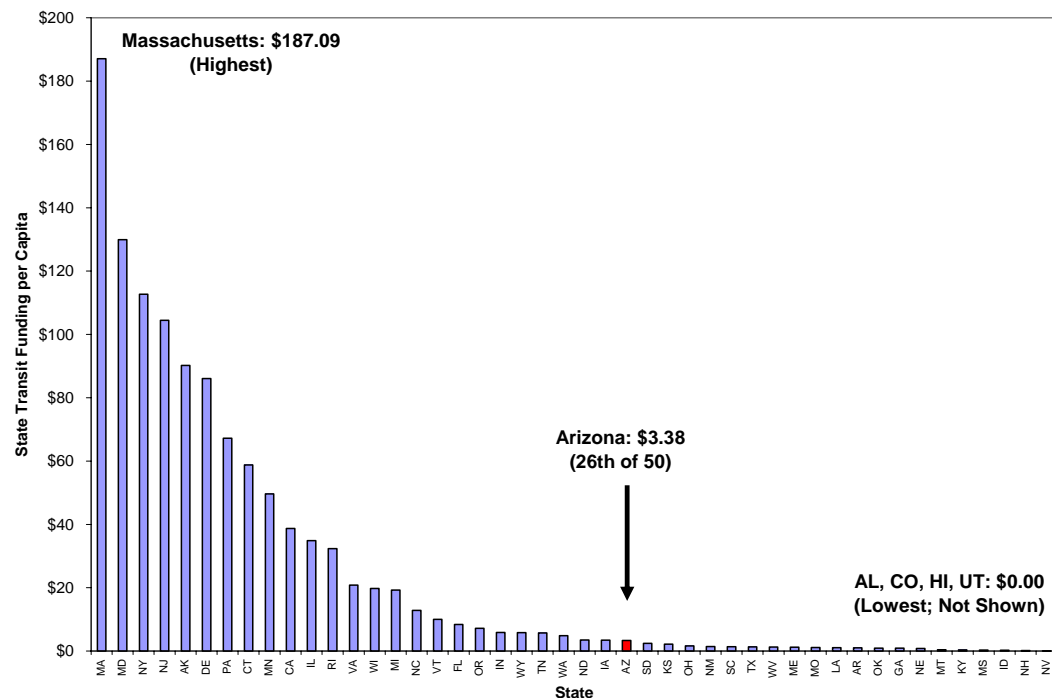
FUNDING ISSUES AND SOLUTIONS

Of the Federal transit funding that is apportioned to Arizona, only 6.2 percent were apportioned to rural transit programs in Fiscal Year (FY) 2006. This is significantly lower than the estimated 24.8 percent of Arizona residents who live in rural areas. Going forward, Federal funding will continue to be important for rural transit services in Arizona, but will be insufficient to address all of the State's current and projected 2016 rural transit needs.

More funding for transit, particularly rural transit, will be needed at the state and local levels in order to significantly expand service provision statewide:

- Arizona ranks 26th among the 50 states in overall state-level transit funding per capita, at \$3.38 per capita (Figure ES.6):
 - States with lower per capita funding include New Mexico (\$1.47), Texas (\$1.30), Oklahoma (\$0.92), Nevada (\$0.04), Colorado (\$0), and Utah (\$0).
 - States with higher per capita funding include Minnesota (\$49.59), California (\$38.74), North Carolina (\$12.87), Oregon (\$7.18), Washington State (\$4.84), and Iowa (\$3.42).

Figure ES.6 Per Capita State-Level Transit Funding, Year 2005



Source: *Survey of State Funding for Public Transportation, 2005*, Table 3-3, page 3-6, Bureau of Transportation Statistics, May 2006. Includes transit funding for both rural and urban areas.

- Existing transit ridership in rural Arizona is estimated at about 0.9 annual trips per capita. As a basis of comparison, annual rural transit ridership per capita in four states generally regarded as having made noteworthy investments in rural transportation are as follows – Iowa: 6.0; Washington State:

5.5; Minnesota: 2.9; North Carolina: 2.6. Anecdotally, none of these four states, despite their high regard, believe that rural transportation needs in their state are being fully satisfied.¹

- Several strategies were proposed and evaluated in order to provide additional state-level funding for rural transit in Arizona. These strategies included increasing motor fuel taxes, vehicle license taxes, motor carrier fees, registration fees, and retail sales taxes.
- It will also be important for local entities, including regional governments, counties, local municipalities, and Tribal governments, to increase their funding for rural transit services in order to meet projected rural transit service needs. The primary sources of funding used for transit services at the local level are sales taxes, property taxes, and fare revenue. Other potential funding sources for rural transit include financial contributions from community foundations or faith-based organizations.

VISION, GOALS, AND OBJECTIVES

In this Final Report, the Study team outlines the long-term strategic direction for rural transit service provision in Arizona, starting by defining a vision, goals, and objectives. These are summarized below.

- **Vision.** There are numerous unmet needs for rural transit services in Arizona. Presently, only 18 percent of estimated demand for rural transit services are currently being met. Existing rural transit services are projected to meet only 13 percent of total ridership need in 2016 if no additional services are introduced.

The following proposed vision statement describes the desired future for rural transit in Arizona:

“Rural transit service provision in Arizona should be expanded significantly through the year 2016 to address the rapidly growing transportation demands and needs of rural residents statewide.”

- **Goals.** Key findings include:
 - Additional rural transit services are needed in multiple cities, towns, Tribal Reservations, and intercity corridors throughout the State.
 - The key market segments for rural transit services should be elderly persons, persons with disabilities, and persons of low income.
 - The trip purposes of those who use rural transit services are varied and include medical appointments, shopping, work, education and job training, personal business, and recreation.

¹ Source: TranSystems.

The goals for Arizona rural transit service provision represent the intended beneficial outcomes associated with accomplishing the above vision. Three goals are defined for the Final Report:

- #1: Provide services in multiple geographic areas;
 - #2: Address needs of particular market segments; and
 - #3: Serve a variety of trip purposes.
- **Objectives.** Tailoring services to particular geographic areas and market segments, improving service coordination among multiple providers, and monitoring and improving service costs are important criteria with respect to rural transit service provision.

The objectives for Arizona rural transit service provision represent the primary areas of focus needed to accomplish the above goals. Three objectives are presented as part of the Final Report:

- #1: Tailor service delivery;
- #2: Improve service effectiveness; and
- #3: Enhance service coordination.

SERVICE ALTERNATIVES AND SOLUTIONS

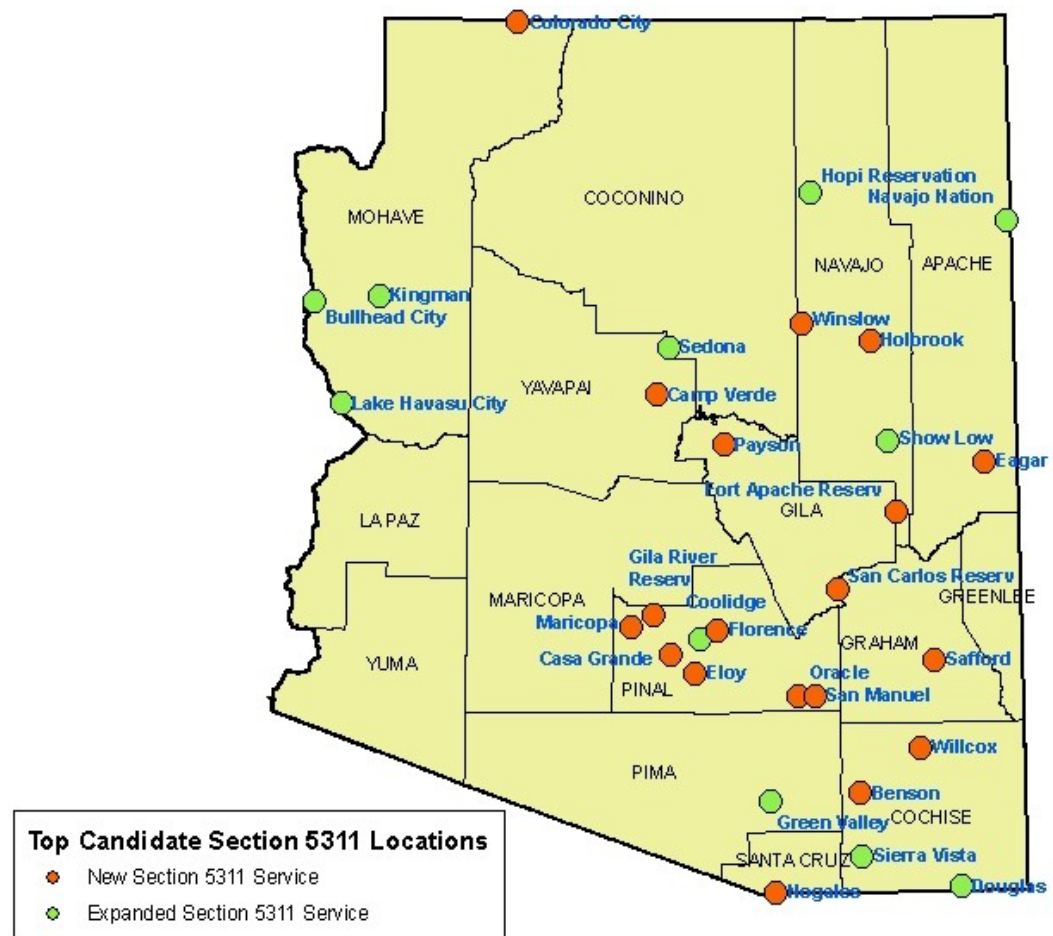
Building on the findings from the previous four interim reports and a statewide stakeholder involvement process, a number of specific Section 5311: Nonurbanized Area general public rural transit service alternatives were defined and recommended as top candidates. Figure ES.7 shows the top locations for new or expanded 5311 program services that operate within rural communities:

- **New Section 5311 Local Services.** New 5311 program services were identified for communities in Pinal County (Casa Grande, Eloy, City of Maricopa, Florence, Oracle, San Manuel); Santa Cruz County (Nogales); Gila County (Payson); Yavapai County (Camp Verde); Graham County (Safford/Thatcher); Navajo County (Winslow, Holbrook); Apache County (Eagar/Springerville); Cochise County (Willcox, Benson); and Mohave County (Colorado City). New 5311 program services were also identified for Tribal Reservations: Gila River Reservation (in Maricopa and Pinal Counties); Fort Apache Reservation (in Apache, Gila, and Navajo Counties); and the San Carlos Reservation (in Gila, Graham, and Pinal Counties).
- **Expanded Section 5311 Local Services.** Expanded 5311 program services were identified for Navajo Transit System (in Apache, Coconino, and Navajo Counties, as well as portions of New Mexico and Utah); Catholic Community Services in Douglas (Cochise County); Pima County Rural Transit; Lake Havasu City Transit Services (Mohave County); Bullhead Area Transit System (Mohave County); Cotton Express in Coolidge (Pinal County); Hopi Senom Transit System (in Coconino and Navajo Counties); City of Sierra Vista Public Transit System (Cochise County); Kingman Area Regional

Transit (Mohave County); the City of Sedona (Yavapai County), and the City of Show Low/Pinetop (Navajo County).

Figure ES.8 shows the top potential corridor locations for new Section 5311 general public intercity transit services that connect rural communities with each other or with urbanized areas. These corridors are located in Pinal County (Casa Grande-Arizona City-Eloy-Coolidge); Pinal-Maricopa Counties (Coolidge/Florence-Phoenix, Maricopa-Tempe); Mohave County (Bullhead City-Kingman-Lake Havasu City); Yavapai-Coconino Counties (Cottonwood-Prescott-Camp Verde-Sedona); Navajo County (Fort Apache Reservation-Show Low-Snowflake/Taylor-Holbrook); Gila-Maricopa Counties (Miami-Superior-East Mesa; Payson-East Mesa); Graham-Greenlee Counties (Safford/Thatcher-Clifton/Morenci); and Navajo-Coconino Counties (Page-Tuba City-Kayenta-Flagstaff).

Figure ES.7 Top Candidates for New or Expanded Local and Tribal Section 5311 Program Service



Source: Arizona Department of Transportation; and Cambridge Systematics, Inc.

Note: Tribal Reservations are shown as a single location that represents a larger geographic area. Green Valley is shown as the most significant expansion opportunity for Pima County Rural Transit.

Figure ES.8 Top Candidates for New Intercity Section 5311 Program Service



Source: Arizona Department of Transportation, and Cambridge Systematics, Inc.

In addition, there are a number of other potential opportunities for new or expanded Section 5310: Elderly and Persons with Disabilities rural transit services statewide (both local and intercity), as well as the potential to improve service coordination between existing Section 5310 services and other rural transit services.

Examples of best practices from other locations with respect to rural transit service provision pertain to topics, including flexible services, coordination, and technology. Many of these practices revolve around building support at the local level, working closely with stakeholders to effectively understand and meet their rural transit needs, and operating high-quality service in a cost-effective manner.

SUPPORTING POLICIES AND PRACTICES

The recommended roles, responsibilities, and next steps for implementing the rural transit service alternatives and solutions are as follows.

- **State:**
 - **Federal funding.** Work with transit operators in Arizona to claim and obligate all available Federal funds;
 - **Capital program.** Develop a master statewide rural transit program for facility expenses and vehicle purchases, and identify new Federal funding sources; and
 - **Operating funding.** Consider performance-based criteria for operators to receive Federal and state funds.
- **Councils of Government:**
 - **Regional planning.** Oversee detailed service planning and cost estimates for new and expanded services;
 - **Data collection.** Collect ridership and cost data for Section 5310 and other social service agency operations;
 - **Service coordination.** Identify public transportation services within the region that promote the efficiency of general public, elderly, and disabled service by supporting the streamlining and coordination of existing public transportation programs;
 - **Regional funding support.** Act on behalf of region to garner support for regional funding collaboration to support public transportation within region; and
 - **Regional coordination.** Act on behalf of region to facilitate communication to other levels of government to ensure regional public transportation needs are identified and action is taken to support identified needs.

The State and COGs should work closely with local and Tribal governments and social service agencies to pool funding resources by region, encourage efficiency, improve service coordination, and consolidate services, if applicable.

- **Local and Tribal governments:**
 - **Support.** Generate support for rural transit among local residents;
 - **Monitor demographics.** Actively monitor demographic changes in jurisdiction that may impact existing or new services;
 - **Service coordination.** Identify public transportation services within city/town or Tribal Reservation that promote the efficiency of general public, elderly, and disabled service by supporting the streamlining and coordination of existing public transportation programs; and
 - **Planning.** Ensure proper planning and development of operations is provided to meet the needs of the city/town or Tribal Reservation.

- **Transit operators:**
 - **Quality service.** Provide high-quality operations tailored to rider needs; and
 - **Data collection.** Monitor service performance on an ongoing basis.

All levels of government should secure additional funding for rural transit services, in cooperation with the private sector and not-for-profit agencies.

A target should be established to plan and cost out specific rural transit service candidates, secure funding, and begin operations of these top candidates within the next five years.

SUMMARY

Rural public transportation plays an important role in Arizona's transportation system. The development of mobility options, connecting rural communities to urbanized areas, and properly addressing rural growth factors must all occur to ensure public transportation service needs are met in rural Arizona over the next decade. The further development and improvement of rural public transportation service in Arizona is critical in addressing the anticipated substantial growth of the State's population. Given only 18 percent of rural Arizona's public transportation needs are being met today, it is clear that significant improvement is necessary. Existing rural public transportation services are projected to meet only 13 percent of total ridership need in 2016 if the current investment strategy continues, as a result of continued population growth throughout the State during the next 10 years. These substantial unmet needs in rural Arizona are in addition to unmet needs in Arizona's urbanized areas, which are also significant and growing.

Next steps to ensure further development and improvement of service should include the use of regionally-based strategies outlined within this Final Report to address the State's unmet rural public transportation needs. Strategies include adding rural public transportation service in cities, towns, and Tribal Reservations to ensure general public and elderly and disabled service needs are met. Increasing local, regional, state, and Federal funding to support these services is critical to ensure service options are provided. Connecting rural and urban communities also represents a growing Arizona need. Establishing roles and responsibilities between the State, COGs, local governments, Tribal Governments, and transit operators will facilitate the development of public transportation service in rural Arizona.

The strategies outlined within the Final Report are important tools to be used in the development of Arizona's rural public transportation services. It is through the use of these strategies and the establishment of critical public transportation services that Arizona can meet the challenge of the rural mobility needs and the State's growing rural population today and for years to come.